its contents, they make it easier for the paretic segment to recover and resume its activity gradually, without working against resistance.

As to the use of the Murphy drip, no physiologist should ever pass on this admirable method who has not himself operated on serious abdominal cases in man. As long as the intestinal paresis with nausea and vomiting persists, the Murphy drip should be continued; not only will the water be absorbed quickly in very large quantities (insuring a sufficient supply of water to the circulation) and without distress, but it will tide the patient over the dangerous period until the intestine returns to its normal activity.

The mild physic we give when the condition improves may not be so necessary; but to the surgeon's mind, after a serious abdominal operation, it is like the "proof" we make after adding long columns of figures. It shows that everything is certainly right. Besides, moving the bowels early after an abdominal operation is probably the best means at our disposal of preventing the formation of adhesions.

To sum up: The physiologist who deals solely with normal peristalsis in healthy rabbits, making an incursion into surgery, thinks that prevention is everything and that doing away with physics will bring the millennium in abdominal surgery. But the surgeon who, by the trauma of the abdominal operation, himself creates (necessarily and unavoidably) in every case more or less intestinal paresis due to the handling of the gut, no matter how gently, is interested chiefly in relieving the condition which exists, and which will always exist, more or less, as long as intestines remain involved in the pathology of the abdominal organs.

Avoid forcing food into patients who are still nauseated from their reverse peristalsis; avoid provoking vomiting, which can only lead to exhaustion and loss of liquids. Extensive use of the Murphy drip for thirty-six or forty-eight hours, or more if necessary, to insure an ample quantity of water to the circulation; enemas to empty the lower part of the bowel. These are well-tried means which no surgeon would like to miss.

In serious cases with threatening stercoraemia and exhaustion, protracted vomiting, etc., from paralytic ileus, an electric enema has often been a powerful stimulant to the paretic intestine and has saved many patients in especially desperate cases, which fortunately are rare.

References.

Alvarez: Calif. State Jour. of Med., July, 1918—"Cure and Prevention of Post-operative Gas Pains."
Alvarez: Surg. Gyn. & Obstet., June, 1918—"Is Purgation Justifiable?"

516 Sutter Street.

Remark. Since this article was written a paper by Dr. Emge appeared in the J. A. M. A. (Sept. 14, 1918), bringing some clinical facts in support of Dr. Alvarez's theory. This paper shows that a physic administered too late will cause a lot of discomfort to the patient. That is easily understood. The exaggerated peristalsis set up by the physic and the peristaltic disturbance (paresis) of the lower bowel caused by the operation are antagonistic and this is bound to cause much pain. The physic given too late intensifies the gas-pains. This does not prove that it is the cause of these pains. The only conclusion to be drawn from Dr. Emge's paper is: No purgative should ever be given the night before an operation. Those who make it a rule to give no physic later than 48 hours preceding the operation do not observe any gas-pains in ordinary cases.

PUBIOTOMY.*

By HENRY AUGUSTUS STEPHENSON, M. D.,
San Francisco.
From the Division of Obstetrics and Gynecology, Leland Stanford, Jr., University School of Medicine.

Cesarean Section because so technically simple has won such a high regard in the opinion of general surgeons, general practitioners, and even many specialists in obstetrics, that often more rational obstetrical operations are disregarded. Pubiotomy is one of these operations, and while it can not compete with Cesarean Section in a large field, in a small field it has much to recommend to those especially trained to manage abnormal obstetrical patients.

It is the purpose of this paper to point out that in at least three groups of cases pubiotomy is a more preferable operation than is Cesarean Section, to describe briefly the technique most often employed in performing the operation, and to give the prognosis for mother and child.

Before taking up the indications for the operation, it will perhaps be helpful to mention the contraindications. Since pubiotomy is always performed in the interest of the child, it should never be done when the baby is dead or in imminent danger. This last can often be determined by attention to the foetal heart rate. If this rate is below 100 or is markedly irregular, pubiotomy should not be done.

If the foetal heart be slow or irregular, it is wiser to attempt a high forceps and if unsuccessful, do a craniotomy as it is not justifiable to subject the mother to a bone-cutting operation to deliver a child which in the majority of cases would not survive the shock of the operation.

The second contraindication is furnished by contracted pelves in which the conjugata vera is 7 cm or less. In these cases, it would be impossible to deliver a normal sized child without seriously injuring the sacro-iliac joints.

Finally in those cases where infection is manifestly present, it is not wise to do the operation.

INDICATIONS.

Group one: There are certain cases where a slight disproportion between head and pelvis exists but where one might expect spontaneous labor to occur. This disproportion may be the result of a large head, showing no signs of hydramnios, with a pelvis which is normal. Or what is seen more often, the head is normal in size and the pelvis is somewhat smaller than normal.

Spontaneous labor occurs in about 75% of all such cases. In the remaining cases, even several hours of second stage pains with ruptured membranes fails to bring about sufficient descent of

* Read before the Forty-seventh Annual Meeting of the Medical Society of the State of California, Del Monte, April, 1918.

the head into the pelvis and we are confronted with the choice of pubiotomy, high forceps or craniotomy. Cesarean Section at this stage is attended with such high mortality that it can scarcely be considered. When both mother and child are in good condition, pubiotomy becomes the preferable procedure. It is wise, however, to put the saw in place, then apply the forceps or do an internal podalic version, and if gentle traction does not bring the head into the pelvis, the bone should be cut through. After severing the bone, extraction of the child is easy.

ILLUSTRATIVE CASES, GROUP ONE.

Case 1. Mrs. H. O., No. 14269-13. Age 27 years. Gravida III, Para II.

Last Menstruation.—August 5, 1915, making expected date of confinement May 12, 1916.

Previous History.—Negative except for previous pregnancies and labors.

Previous Pregnancies.—Two uneventful.

Previous Labors.—First one March 1913. Duration 34 hours. Terminated by high forceps. Baby still born, weight 9½ pounds. Second one, July 1914. Duration 26 hours, terminated by version and extraction. Baby born alive but lived only a few minutes. Weight 9¼ pounds.

Recovery uneventful in both cases.

Present Pregnancy.—Uneventful.

Pelvic measurements:

Spines	24
Crests	25
Trochanters	31.5
Left Oblique	21.5
Right Oblique	20.
External Conjugate	19.5
Diagonal Conjugate	11
Bisischial	9½

Pelvis.—Flat.

It was decided to watch patient carefully and to induce labor before the baby became too large as there seemed to be slight disproportion between the head and pelvis. On May 9th, as patient showed no inclination to go into labor a bougie was introduced. A few pains resulted but patient did not go into active labor. Nine hours later, the cervix was about one-half dilated, with thin edges. Pains had ceased in spite of the administration of quinine (15 grs.) The disproportion did not seem great, so it was decided to complete the dilatation of the cervix manually and do a version and immediate extraction.

In view of the past obstetrical history it was deemed wise to lay a saw and if difficulty was experienced in the extraction to do a pubiotomy. This was done according to the method described later.

When the extraction was begun, it became evident that the child was larger than had been anticipated and it was difficult to get the thighs down. The pubiotomy was then done and a very easy extraction followed.

The upper wound was closed, a small drain placed in the lower wound and the patient's hips tightly strapped with adhesive. There was no communicating tear into the vagina. Catheterization showed clear urine. Baby weighed 10 lbs. and was 51 cm. long. Mother and baby left hospital on May 31, 1916, in excellent condition.

The only increase in size of the pelvis which was noted at the time of discharge was in the bisischial diameter, which measured 11.5 cm.

Case 2. Mrs. V. S., No. 19569. Age 31 years. Gravida VIII, Para VI.

Last Menstruation.—Some time in February, 1916, one month after last confinement, making expected date of confinement doubtful.

Previous History.—Negative except for previous labors.

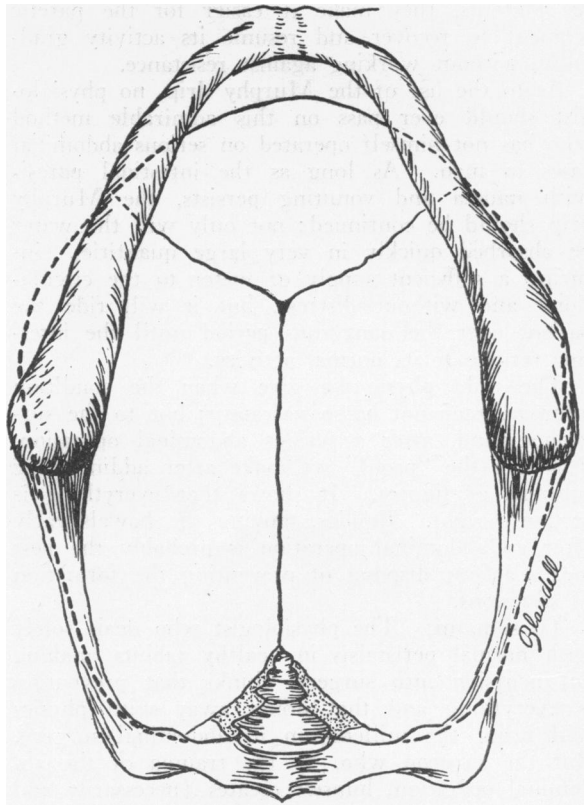

Fig. 1—Funnel Pelvis. Bischial diameter 7 cm. Post. Sagittal diameter 5 cm.

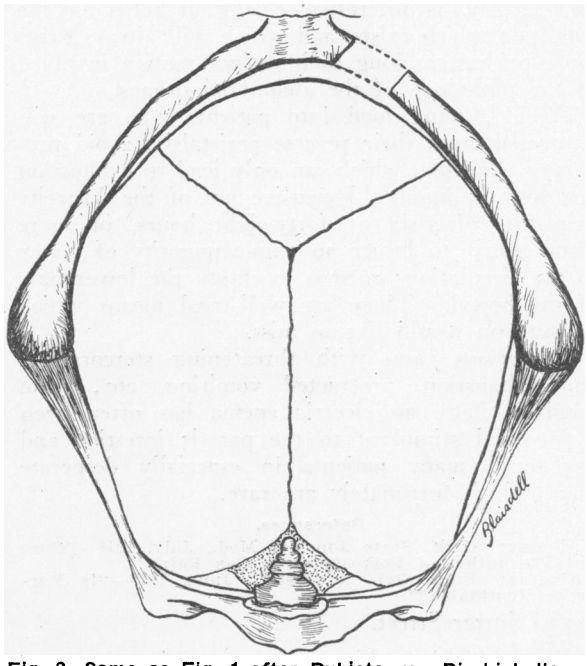

Fig. 2—Same as Fig. 1 after Publotomy. Bischial diameter 10 cm. Post. Sagittal diameter 5½ cm.

Previous Pregnancies.—Uneventful except for one spontaneous abortion 8 years ago.

Previous Labors.—Of the first four labors, three babies died at time of labor. The fifth baby was born in Lane Hospital in December, 1914, after an attempt at high forceps, by a very difficult version. Weight 8 2/16 lbs. Baby lived. The sixth baby was born in Lane Hospital in January, 1916, after long second stage, by version. Weight 10 lbs., length 56½ cm. Baby alive but suffered with Erb's

Palsy and a depressed fracture of left parietal bone.

Present Pregnancy.—Uneventful.

Pelvic measurements:

Spines	28
Crests	30
Trochanter	34
Right Oblique	24
Left Oblique	23½
External Conjugate	20
True Conjugate (estimated)	10
Bisischial	10

Pelvis—Flat.

Patient entered hospital April 5, 1917, in labor. Fundus measured 40 cm. above symphysis indicating very large child. Head not engaged. First stage of labor lasted 27 hours. After two hours of second stage pains and with ruptured membranes it was decided to terminate labor by Internal Podalic Version. A pubiotomy saw was placed as a prophylactic measure. Under anaesthesia the promontory was found to project forward at a sharp angle, the true conjugate was estimated at about 10 cm. After turning child it was found impossible to deliver the head and the pubis was severed. Baby born in good condition, weighed 8 13/16 lbs., length 53 cm. There were no lacerations. Mother and baby dismissed April 21, 1917, in good condition.

Group two: There is a second group of cases in which pubiotomy is usually the best possible procedure; namely, in those cases with funnel pelves. Here the bisischial diameter of the outlet measures 8 cm. or less.

Williams of Baltimore has called special attention to this group and finds that in his clinic the contraction occurs in about 8 per cent. of all women. The contraction may occur independently or be associated with a contraction of the superior strait as well. Spontaneous labor does not depend in the true funnel pelves on the bisischial diameter alone but also on the posterior sagittal diameter which is the distance from the mid point of the bisischial diameter to the tip of the sacrum. If this diameter be long enough, spontaneous labor may occur even when the bisischial diameter is as short as 5.5 cm. It has been shown that in this type of pelvis the enlargement following pubiotomy reaches its maximum and very often following the operation a normal pelvis results. This would be most desirable in young women, as a spontaneous outcome could be expected in future labors.

So far, there have been no pubiotomies performed in the Stanford Women's Clinic for this indication. Several patients with funnel pelves have been delivered by Cesarean Section at the onset of labor, some of whom might possibly have delivered themselves after a test of labor, while some patients have been delivered by forceps. In the future it is the intention to recommend to patients with funnel pelves that they submit to the passing of a saw prophylactically and to have pubiotomy done if necessary.

Group three: The third group of cases at times requiring pubiotomy are patients with breech presentations who have a slight disproportion between pelvis and head.

When the head presents at the superior strait one can usually determine with a fair degree of accuracy whether engagement and finally spontaneous labor will occur. When the child presents by the breech, however, this is not so simple a matter, and if external version can not be performed there is no way of knowing whether engagement can be effected even with an attempted breech extraction. When the pelvis is slightly contracted and the patient primiparous the matter becomes quite a deal more complicated and may result in a futile attempt to deliver a living child or in craniotomy on the aftercoming head. Confronted with the above situation one should wait for complete dilatation of the cervix, then prepare the patient for a breech extraction and pass a saw behind the pubis before attempting to extract. If the extraction then offers no great difficulty, the saw can be removed and the wound closed. If difficulty arises in the delivery the bone can be quickly severed and the child can be delivered safely. The saw should always be passed first, however, as one has not sufficient time to do so if the child has already been extracted as far as the head.

ILLUSTRATED CASE, GROUP THREE.

Mrs. A. W., private patient of Dr. A. B. Spalding. Age 24. Gravida 1, Para 0.

Last Menstruation.—August 7, 1915. Labor due May 14, 1917.

Previous History.—Negative.

Present Pregnancy.—Negative. Life felt Dec. 6, 1916, at the 17 2/7 week.

Pelvis normal.

Patient entered Lane Hospital May 18, 1917, in labor. The presentation was frank breech L.S.A. After 19 hours and 15 minutes, the cervix was fully dilated, membranes unruptured, frank breech still above brim. The membranes ruptured after 25 minutes of second stage pains. As the patient was very anxious for a live child she readily consented to have a pubiotomy saw passed prophylactically. The saw was passed, the perineum dilated manually, a partial internal podalic version was done and the patient allowed to deliver herself, which she did in 28 minutes. The saw was removed without sawing the bone and the incision closed, including a laceration of the perineum. The baby weighed 7 14/16 lbs. The mother and baby made an uneventful recovery.

In the clinic, so far, no patients in this group have been helped with a pubiotomy saw, and as a result several babies have died that could have been saved by this operation.

The technique usually followed in doing the operation is that described by Doederlein in 1904. After cleansing the patient thoroughly and emptying the bladder by catheter a small incision is made parallel to and slightly above the pubic bone. This is usually done on the left side but there is no particular advantage in this.

Care shoud be taken to cut down just medial to the pubic spine. If one goes too far laterally injury may be done to the large vessels (obturator and femoral) and also to the attachment of Poupart's ligament. Likewise one must not do a symphysiotomy, but keep far enough away from the symphysis to leave a small bony segment.

A special curved needle, resembling an aneurysm needle, is passed behind the bone and pushed through the labium majus. The saw is fastened to this, and the needle withdrawn, leaving the saw in position behind the bone. The bone can be sawed through with only a few movements. At

this stage a fair amount of hemorrhage occurs, controlled by pressure. The bone usually separates about 3 cm as soon as cut through. In order to protect the sacro-iliac joints, it is wise to have an assistant stand on either side and make pressure over the hips so the gaping does not exceed 6 cm. Forceps or version can then be accomplished.

Following the operation the bladder should again be catheterized to determine the presence of injury. The upper incision is closed by suture and a small drain is placed in the incision in the labium.

An adhesive strap about 4 inches wide should be put tightly around the hips holding the cut edges of the bone as nearly together as possible. The patient should then be placed on a Bradford frame to facilitate handling. After a few days the patient can be removed from the frame and usually is up and walking by the end of the third week.

The prognosis is good for both mother and child.

The mortality rate is not higher than 3 per cent. in cases done by experienced operators. Williams reports 43 cases without a death. Rongy reports 28 cases with one death, the patient dying of gangrene of the foot.

The largest number of cases have been reported by Schlafli, who collected from the literature 700 cases done by 142 operators. The maternal mortality was 9.6 and the foetal 4.8. The maternal mortality here is unquestionably high and can be attributed to the large number of operators.

A series of 319 cases done by well-recognized operators was reported in 1907 with maternal mortality of 1.88 per cent. and foetal of 4 per cent.

Of more interest, however, are the complications which may occur and which are considered as serious objections by those who are opposed to the operation.

First to be considered, are injuries to the bladder and urethra. If one is not careful to have the bladder empty before passing the needle and in cases of cystocele to hold the bladder away from the needle, it is easy to injure either bladder or urethra. I have seen two such injuries, one in which the needle was passed through both walls of the bladder, but the mistake was discovered before the saw was used. Fistulae did not develop and the bladder healed spontaneously. The second case had a small fistula which healed within three weeks. There was one fistula in Rongy's series.

Communicating tears are seen in about 20 per cent. of the cases. These should be immediately repaired, and in the cases seen while in Williams' Clinic, all did well.

Hemorrhage may be rather profuse when the bone is severed. This, however, is usually venous and can be controlled by pressure. If the bleeding is persistent the wound should be laid open and the bleeding vessel ligated.

Some of these cases have experienced slight difficulty in walking immediately after leaving the hospital. In none of the cases I have seen has this persisted more than two months. It has been extremely interesting to see how free from trouble these patients are, when we realize they have a movable segment of bone in their pelvis. This will be better appreciated from the X-Ray slides which will follow.

From the above then, it seems justifiable to conclude that:

1. Pubiotomy competes with Cesarean Section, only in a limited class of cases.
2. Pubiotomy is often indicated in:
   a. Moderately contracted pelves where test of labor fails to bring about spontaneous birth and when both mother and child are in good condition.
   b. Funnel pelves of pronounced degree especially in young women. The effect on the pelvis here is often such as to leave the outlet normal.
   3. Patients having large babies presenting by the breech, or with borderline pelves and a breech presentation where one can not be sure as to the presence of disproportion between head and pelves.
3. The prognosis is good for both mother and child, when the operation is done by experienced operators in well-equipped hospitals and in cases where both mother and child are in good condition.

Lane Hospital.

A CONTRIBUTION ON FOCAL RENAL INFECTIONS.*

By LEON JOSEPH ROTH, M. D., Los Angeles.

This report is based on six selected cases, all showing certain similar constitutional symptoms and wide variance regarding local manifestations and end results. The purpose of these histories is to demonstrate the uncertainty regarding the course of infection, pathological processes and terminology of a not uncommon condition. Bacilli of the colon type were found in five cases, but differed widely as to number, and it is very apparent that the severity of the actual bacillary infection is in no way parallel to the symptoms or to the local and general manifestations. A curious fact exists that no casts were demonstrable except in one case (Mrs. E. F. T.), and even then only a few hyaline and epithelial were found after a thorough search.

Case 1. Mrs. T. H., age 23. Patient seen in consultation only. Has recently recovered from a tonsillar infection and since has been having night sweats (about one week). Temperature 103 plus. No pain except during the period of frequent urinations. There exists a characteristic bacteriuria of colon type. General physical appearance very good. Except the tonsillar, has no other discoverable septic foci. Patient has been under a routine treatment. The urine cleared and her symptoms disappeared after about ten days when she returned to her home.

B. B., age 4. No definite history obtained on account of ignorance of parent. Child actually suffering from nasal and pharyngeal infection. Urinations frequent and painful. Rectal temperature 105. Urine gives characteristic swirl of bacteriuria and microscopically shows myriads of bacilli of colon type. No membrane in throat, no eruption on body; vulva inflamed. This child died about the seventh day of its illness.

Case 3. P. M., male, age 25. Has never been

* Read before the Forty-seventh Annual Meeting of the Medical Society of the State of California, Del Monte, April, 1918 (Genito-Urinary Section).